

APPENDIX C

Laboratory Results Report

California Environmental Protection Agency

Air Resources Board

**O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate
(Diazinon) and the Oxygen Analog (Diazoxon) Analytical Results for
Ambient Air Monitoring Samples**

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This report has been reviewed by staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names of commercial products constitute endorsement or recommendation for use.

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1.0 INTRODUCTION

The Department of Pesticide Regulation (DPR) requested the Air Resources Board (ARB) conduct ambient air monitoring for O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate (Diazinon) and its oxygen analog Diazoxon. This report covers the analytical and quality assurance results for Diazinon/Diazoxon during an ambient air study carried out in Monterey, Santa Clara, and San Benito counties in 2009. DPR requested a method estimated quantitation limit (EQL) of 0.013 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) for Diazinon. No EQL was requested for Diazoxon. The EQL's achieved during this project were approximately 0.080/0.017 $\mu\text{g}/\text{m}^3$ for Diazinon/Diazoxon respectively.

2.0 METHOD DEVELOPMENT

2.1 Overview

Ambient air samples are collected on XAD-2 sorbent tubes. Sampled tubes are stored at four degrees centigrade ($^{\circ}\text{C}$) or lower prior to extraction. Sample tubes are extracted using three milliters (ml) of pesticide grade ethyl acetate (EtAc). Sample analysis is performed using a gas chromatograph with a mass spectrometer (GC/MS) in the selected ion monitoring mode (SIM). Sample analysis and quantitation uses an internal standard (Diazinon-d₁₀). Appendix A contains the standard operating procedure (SOP) and the method development results for Diazinon/Diazoxon.

2.2 Calibration Curve

Standard concentration of approximately 11/25, 22/50, 45/100, 90/200, 180/400, 360/800 ng/ml of Diazinon/Diazoxon are used to produce a six-point calibration curve. All calibration standards are spiked with 100 ng/ml of internal standard, Diazinon-d₁₀. All calibrations curves performed have an r^2 (variance) greater than or equal to 0.995. Calibrations are performed at the beginning of the monitoring program, after instrument maintenance, after remaking of calibration curve standards, and whenever the continuing calibration verification standard (CCV) did not fall within \pm 25 percent (%) of expected value.

2.3 Minimum Detection Limit (MDL)

The MDL calculation follows the United States Environmental Protection Agency (USEPA) procedures for calculating MDL's. Using the analysis of seven low-level matrix analyses (10/21 ng/ml), the MDL and EQL are calculated as follows:

*s = the standard deviation of the concentration calculated for the seven replicate spikes.
For Diazinon/Diazoxon: s = 0.3811/1.0073*

$$\text{MDL} = (3.14) \times (s) = (3.14) \times (0.3811/1.0073) = 1.197/3.163 \text{ ng/ml}$$

$$\text{EQL} = (5) \times (\text{MDL}) = (5) \times (1.197/3.163) = 5.985/15.815 \text{ ng/ml}$$

Although the MDL's are statistically achievable, based on the instrument's sensitivity the actual EQL for Diazinon/Diazoxon are represented by the lowest standard run (11/25 ng/ml). This equates to an EQL of 7.6/17.4 nanograms per cubic meter (ng/m³). The MDL's used in this report will then be approximately 1.5/3.5 ng/m³. These values are achieved when an air sample of 4.32 m³ and a final extract volume of three milliters (ml) are used. Results at or above the EQL will be reported to two significant figures. Results below the EQL but greater than or equal to the MDL are reported to one (1) significant figure. Results less than MDL are reported as the calculated MDL to one (1) significant figure.

3.0 DIAZINON/DIAZOXON AMBIENT AIR MONITORING SAMPLE RESULTS

The laboratory received a total of 192 ambient air samples plus seven field spikes, eight trip blanks, and four trip spikes from July 3 through August 20, 2009. Table 1 presents the results of the analysis of the Diazinon/Diazoxon ambient air samples by site.

4.0 ANALYTICAL QUALITY CONTROL SAMPLES

4.1 System Blanks

Laboratory staff analyzes a system blank with each analytical batch, after each CCV, after every tenth sample, and after samples containing high levels of Diazinon/Diazoxon or co-extracted contaminants. Staff defines the analytical batch as all the samples analyzed together, but not to exceed 20 samples. The system blank is run to insure the instrument does not contribute interferences to the analysis, and to minimize carryover from high level samples. All system blanks were less than the MDL.

4.2 Method Blanks

Laboratory staff analyzed a method blank with each analytical batch. This is an XAD-2 sorbent tube prepared and analyzed as described for the ambient samples. All method blank results were less than the MDL.

4.3 Laboratory Control Samples (LCS)

Laboratory staff analyzed a LCS with each analytical batch. The stock standard used to prepare the LCS should come from a different source or a different lot number than the stock standard used for method calibration. In this case only one source was available so the LCS was made up from a different aliquot and at a different concentration than the calibration standard. The concentration of Diazinon/Diazoxon for the LCS was 24/43 ng/ml. The LCS recoveries averaged 124/97% with a standard deviation of 8.0/9.5%. The acceptable LCS range was 100/68.5% to 148/126%. All LCS results were within this range.

4.4 Continuing Calibration Verification Standards (CCV)

Following standard lab procedures, laboratory staff analyzed a CCV after every calibration curve, after every tenth sample and at the end of an analytical batch. The CCV must be within \pm 25% of the expected value. If any of the CCV's are outside this limit, the affected samples are re-analyzed. The CCV standard concentration was 22/50 ng/ml. All the CCV's were within the 25% acceptance range.

4.5 Laboratory Duplicates

Nineteen pairs of laboratory duplicates were run with this project. The duplicate analyses are run from two aliquots of a single sorbent tube extract. The relative percent difference for each pair is reported in Table 2.

4.6 Co-located Samples

Forty eight pairs of co-located samples were analyzed during this study. None of the co-located samples had values above the requested EQL. The relative percent difference for each pair is reported in Table 3.

5.0 FIELD, TRIP, AND LABORATORY SPIKES AND TRIP BLANKS

During the Monterey, Santa Clara, San Benito Counties 2009 project, seven field and four trip spikes along with four laboratory spikes, and eight trip blanks were analyzed. Laboratory staff prepared the spikes with a target of 72/130 ng/sample of Diazinon/Diazoxon.

5.1 Laboratory Spikes

Table 4 presents the results of the laboratory spikes. The average Diazinon/Diazoxon recovery was 128/100% with a standard deviation of 10.61/7.92%.

5.2 Trip Spikes

Table 4 presents the results of the trip spikes. The average Diazinon/Diazoxon recovery was 127/106% with a standard deviation of 10.53/7.49%.

5.3 Field Spikes

Table 4 presents the results of the field spikes. Seven field spikes were analyzed during this study. Other than the first week two spikes were collected every other week during the field sampling period. During the first week only one field spike was collected. Recovery results varied from 96.0/82.0% to 151/109%. In several cases the co-located sample had results above the MDL, but less than the EQL. The average recovery for Diazinon was 123/99% with a standard deviation of 21.7/12.2%. Values in

Table 4 are reported without correction.

5.4 *Trip Blanks*

Table 4 presents the results of the trip blanks. Eight trip blanks were received during this project and all results were less than the MDL.

6.0 DISCUSSION

The Laboratory received 192 field samples and 19 field quality control samples. Seven field spikes, four trip spikes, and eight trip blanks were received. Four additional spikes were prepared in the laboratory. Results for Diazinon/Diazoxon ranged from less than the MDL to 17.1/11.6 ng/m³. One hundred and sixty-one (161) samples for Diazinon and one hundred eighty-four (184) samples for diazoxon had results less than the MDL. For this project the MDL's were 1.5/3.5 ng/m³. Twenty-eight (28) samples for Diazinon and nine samples for diazoxon had results between the MDL and EQL. The values ranged from 2.7 to 6.7 ng/m³ for Diazinon and 4.7 to 11.6 ng/m³ for Diazoxon. Three samples had results above the EQL for Diazinon and no samples had results above the EQL for Diazoxon. The values for Diazinon ranged from 10.6 to 17.1 ng/m³.

All samples received were analyzed within five days of sample receipt using a GC/MSD. All samples with detectable results were analyzed twice, and if confirmed the original result was reported.

No other anomalous events occurred.

Table 1: Ambient Air Monitoring Results
Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diaxonon Amount (ng/sample)
Chualar	3	CHU1	7/3/2009	7/6/2009	<7	<20
	12	CHU2	7/3/2009	7/7/2009	<7	<20
	13	CHU2-C	7/3/2009	7/7/2009	<7	<20
	24	CHU3	7/9/2009	7/13/2009	<7	<20
	35	CHU4	7/9/2009	7/14/2009	<7	<20
	36	CHU4-C	7/9/2009	7/14/2009	<7	<20
	44	CHU5	7/9/2009	7/15/2009	<7	<20
	53	CHU6	7/16/2009	7/20/2009	30	50
	54	CHU6-C	7/16/2009	7/20/2009	30	50
	62	CHU7	7/16/2009	7/21/2009	<7	<20
	68	CHU8	7/16/2009	7/21/2009	<7	<20
	74	CHU9	7/23/2009	7/27/2009	<7	<20
	82	CHU10	7/23/2009	7/28/2009	<7	<20
	83	CHU10-C	7/23/2009	7/28/2009	<7	<20
	93	CHU11	7/23/2009	7/29/2009	<7	<20
	106	CHU12	7/31/2009	8/3/2009	20	<20
	107	CHU12C	7/31/2009	8/3/2009	20	<20
	115	CHU13	7/31/2009	8/4/2009	10	<20
	121	CHU14	7/31/2009	8/5/2009	<7	<20
	128	CHU15	7/31/2009	8/5/2009	20	<20
	137	CHU16	8/6/2009	8/10/2009	20	<20
	149	CHU17	8/6/2009	8/11/2009	10	<20
	150	CHU17C	8/6/2009	8/11/2009	10	<20
	156	CHU18	8/6/2009	8/11/2009	20	<20
	165	CHU19	8/13/2009	8/17/2009	<7	<20
	166	CHU19C	8/13/2009	8/17/2009	<7	<20
	174	CHU20	8/13/2009	8/18/2009	20	<20
	180	CHU21	8/13/2009	8/18/2009	30	<20
	188	CHU22	8/20/2009	8/25/2009	<7	<20
	201	CHU23	8/20/2009	8/25/2009	<7	<20
	202	CHU23-C	8/20/2009	8/25/2009	<7	<20
	209	CHU24	8/20/2009	8/25/2009	<7	<20

**Table 1: Ambient Air Monitoring Results
Monterey, Santa Clara and San Benito Counties
2009**

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diazoxon Amount (ng/sample)
Gilroy	7	GIL1	7/3/2009	7/6/2009	<7	<20
	17	GIL2	7/3/2009	7/7/2009	<7	<20
	18	GIL2-C	7/3/2009	7/7/2009	<7	<20
	20	GIL3	7/9/2009	7/13/2009	<7	<20
	29	GIL4	7/9/2009	7/14/2009	<7	<20
	30	GIL4-C	7/9/2009	7/14/2009	<7	<20
	41	GIL5	7/9/2009	7/15/2009	<7	<20
	47	GIL6	7/16/2009	7/20/2009	<7	<20
	48	GIL6-C	7/16/2009	7/20/2009	<7	<20
	59	GIL7	7/16/2009	7/21/2009	<7	<20
	65	GIL8	7/16/2009	7/21/2009	<7	<20
	77	GIL9	7/23/2009	7/27/2009	<7	<20
	88	GIL10	7/23/2009	7/28/2009	<7	<20
	89	GIL10-C	7/23/2009	7/28/2009	<7	<20
	97	GIL11	7/23/2009	7/29/2009	<7	<20
	100	GIL12	7/31/2009	8/3/2009	<7	<20
	101	GIL12-C	7/31/2009	8/3/2009	<7	<20
	112	GIL13	7/31/2009	8/4/2009	73	20
	118	GIL14	7/31/2009	8/4/2009	<7	<20
	125	GIL15	7/31/2009	8/5/2009	10	<20
	131	GIL16	8/6/2009	8/10/2009	20	<20
	145	GIL17	8/6/2009	8/11/2009	<7	<20
	146	GIL17C	8/6/2009	8/11/2009	<7	<20
	153	GIL18	8/6/2009	8/11/2009	<7	<20
	159	GIL19	8/13/2009	8/17/2009	<7	<20
	160	GIL19C	8/13/2009	8/17/2009	<7	<20
	171	GIL20	8/13/2009	8/18/2009	<7	<20
	177	GIL21	8/13/2009	8/18/2009	<7	<20
	184	GIL22	8/20/2009	8/25/2009	<7	<20
	195	GIL23	8/20/2009	8/25/2009	<7	<20
	196	GIL23-C	8/20/2009	8/25/2009	<7	<20
	206	GIL24	8/20/2009	8/25/2009	<7	<20

Table 1: Ambient Air Monitoring Results

Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diazoxon Amount (ng/sample)
Hollister	5	HOL1	7/3/2009	7/6/2009	<7	<20
	6	HOL1-C	7/3/2009	7/6/2009	<7	<20
	16	HOL2	7/3/2009	7/7/2009	<7	<20
	26	HOL3	7/9/2009	7/13/2009	<7	<20
	39	HOL4	7/9/2009	7/15/2009	<7	<20
	40	HOL4-C	7/9/2009	7/15/2009	<7	<20
	46	HOL5	7/9/2009	7/15/2009	<7	<20
	57	HOL6	7/16/2009	7/20/2009	<7	<20
	58	HOL6-C	7/16/2009	7/20/2009	<7	<20
	64	HOL7	7/16/2009	7/21/2009	<7	<20
	70	HOL8	7/16/2009	7/21/2009	<7	<20
	76	HOL9	7/23/2009	7/27/2009	<7	<20
	86	HOL10	7/23/2009	7/28/2009	<7	<20
	87	HOL10-C	7/23/2009	7/28/2009	<7	<20
	96	HOL11	7/23/2009	7/29/2009	<7	<20
	110	HOL12	7/31/2009	8/3/2009	<7	<20
	111	HOL12-C	7/31/2009	8/3/2009	<7	<20
	117	HOL13	7/31/2009	8/4/2009	<7	<20
	123	HOL14	7/31/2009	8/5/2009	<7	<20
	130	HOL15	7/31/2009	8/5/2009	<7	<20
	141	HOL16	8/6/2009	8/10/2009	<7	<20
	142	HOL16C	8/6/2009	8/10/2009	<7	<20
	152	HOL17	8/6/2009	8/11/2009	<7	<20
	158	HOL18	8/6/2009	8/11/2009	<7	<20
	169	HOL19	8/13/2009	8/17/2009	<7	<20
	170	HOL19C	8/13/2009	8/17/2009	<7	<20
	176	HOL20	8/13/2009	8/18/2009	<7	<20
	182	HOL21	8/13/2009	8/18/2009	<7	<20
	192	HOL22	8/20/2009	8/25/2009	<7	<20
	193	HOL22-C	8/20/2009	8/25/2009	<7	<20
	204	HOL23	8/20/2009	8/25/2009	<7	<20
	211	HOL24	8/20/2009	8/25/2009	<7	<20

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Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diazoxon Amount (ng/sample)
King City	1	KCY1	7/3/2009	7/6/2009	<7	<20
	8	KCY2	7/3/2009	7/7/2009	<7	<20
	9	KCY2-C	7/3/2009	7/7/2009	<7	<20
	22	KCY3	7/9/2009	7/13/2009	<7	<20
	31	KCY4	7/9/2009	7/14/2009	<7	<20
	32	KCY4-C	7/9/2009	7/14/2009	<7	<20
	42	KCY5	7/9/2009	7/15/2009	<7	<20
	49	KCY6	7/16/2009	7/20/2009	<7	<20
	50	KCY6-C	7/16/2009	7/20/2009	<7	<20
	60	KCY7	7/16/2009	7/21/2009	<7	<20
	66	KCY8	7/16/2009	7/21/2009	<7	<20
	72	KCY9	7/23/2009	7/27/2009	<7	<20
	78	KCY10	7/23/2009	7/27/2009	<7	<20
	79	KCY10-C	7/23/2009	7/27/2009	<7	<20
	91	KCY11	7/23/2009	7/29/2009	<7	<20
	102	KCY12	7/31/2009	8/3/2009	<7	<20
	103	KCY12-C	7/31/2009	8/3/2009	<7	<20
	113	KCY13	7/31/2009	8/4/2009	<7	<20
	119	KCY14	7/31/2009	8/5/2009	<7	<20
	126	KCY15	7/31/2009	8/5/2009	<7	<20
	133	KCY16	8/6/2009	8/10/2009	<7	<20
	134	KCY16C	8/6/2009	8/10/2009	<7	<20
	147	KCY17	8/6/2009	8/11/2009	<7	<20
	154	KCY18	8/6/2009	8/11/2009	<7	<20
	161	KCY19	8/13/2009	8/17/2009	<7	<20
	162	KCY19C	8/13/2009	8/17/2009	<7	<20
	172	KCY20	8/13/2009	8/18/2009	<7	<20
	178	KCY21	8/13/2009	8/18/2009	<7	<20
	186	KCY22	8/20/2009	8/25/2009	<7	<20
	197	KCY23	8/20/2009	8/25/2009	<7	<20
	198	KCY23-C	8/20/2009	8/25/2009	<7	<20
	207	KCY24	8/20/2009	8/25/2009	<7	<20

Table 1: Ambient Air Monitoring Results

Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diazoxon Amount (ng/sample)
Salinas	4	SAL1	7/3/2009	7/6/2009	<7	<20
	14	SAL2	7/3/2009	7/7/2009	<7	<20
	15	SAL2-C	7/3/2009	7/7/2009	<7	<20
	25	SAL3	7/9/2009	7/13/2009	<7	<20
	37	SAL4	7/9/2009	7/14/2009	<7	<20
	38	SAL4-C	7/9/2009	7/15/2009	<7	<20
	45	SAL5	7/9/2009	7/15/2009	<7	<20
	55	SAL6	7/16/2009	7/20/2009	20	40
	56	SAL6-C	7/16/2009	7/20/2009	20	40
	63	SAL7	7/16/2009	7/21/2009	<7	<20
	69	SAL8	7/16/2009	7/21/2009	<7	<20
	75	SAL9	7/23/2009	7/27/2009	<7	<20
	84	SAL10	7/23/2009	7/28/2009	<7	<20
	85	SAL10-C	7/23/2009	7/28/2009	<7	<20
	95	SAL11	7/23/2009	7/29/2009	<7	<20
	108	SAL12	7/31/2009	8/3/2009	20	<20
	109	SAL12-C	7/31/2009	8/3/2009	20	<20
	116	SAL13	7/31/2009	8/4/2009	<7	<20
	122	SAL14	7/31/2009	8/5/2009	<7	<20
	129	SAL15	7/31/2009	8/5/2009	<7	<20
	139	SAL16	8/6/2009	8/10/2009	<7	<20
	140	SAL16C	8/6/2009	8/10/2009	<7	<20
	151	SAL17	8/6/2009	8/11/2009	30	<20
	157	SAL18	8/6/2009	8/11/2009	46	<20
	167	SAL19	8/13/2009	8/17/2009	<7	<20
	168	SAL19C	8/13/2009	8/17/2009	<7	<20
	175	SAL20	8/13/2009	8/18/2009	56	<20
	181	SAL21	8/13/2009	8/18/2009	20	<20
	190	SAL22	8/20/2009	8/25/2009	20	<20
	191	SAL22-C	8/20/2009	8/25/2009	20	<20
	203	SAL23	8/20/2009	8/25/2009	<7	<20
	210	SAL24	8/20/2009	8/25/2009	<7	<20

Table 1: Ambient Air Monitoring Results

Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Date Received	Analysis Date	Diazinon Amount (ng/sample)	Diazoxon Amount (ng/sample)
Soledad	2	SOL1	7/3/2009	7/6/2009	<7	<20
	10	SOL2	7/3/2009	7/7/2009	<7	<20
	11	SOL2-C	7/3/2009	7/7/2009	<7	<20
	23	SOL3	7/9/2009	7/13/2009	<7	<20
	33	SOL4	7/9/2009	7/14/2009	<7	<20
	34	SOL4-C	7/9/2009	7/14/2009	<7	<20
	43	SOL5	7/9/2009	7/15/2009	<7	<20
	51	SOL6	7/16/2009	7/20/2009	20	50
	52	SOL6-C	7/16/2009	7/20/2009	20	50
	61	SOL7	7/16/2009	7/21/2009	30	40
	67	SOL8	7/16/2009	7/21/2009	<7	<20
	73	SOL9	7/23/2009	7/27/2009	<7	<20
	80	SOL10	7/23/2009	7/27/2009	<7	<20
	81	SOL10-C	7/23/2009	7/27/2009	<7	<20
	92	SOL11	7/23/2009	7/29/2009	<7	<20
	104	SOL12	7/31/2009	8/3/2009	<7	<20
	105	SOL12-C	7/31/2009	8/3/2009	<7	<20
	114	SOL13	7/31/2009	8/4/2009	<7	<20
	120	SOL14	7/31/2009	8/4/2009	<7	<20
	127	SOL15	7/31/2009	8/5/2009	<7	<20
	135	SOL16	8/6/2009	8/10/2009	<7	<20
	136	SOL16-C	8/6/2009	8/10/2009	<7	<20
	148	SOL17	8/6/2009	8/11/2009	<7	<20
	155	SOL18	8/6/2009	8/11/2009	<7	<20
	163	SOL19	8/13/2009	8/17/2009	20	<20
	164	SOL19-C	8/13/2009	8/17/2009	20	<20
	173	SOL20	8/13/2009	8/18/2009	<7	<20
	179	SOL21	8/13/2009	8/18/2009	20	<20
	187	SOL22	8/20/2009	8/25/2009	<7	<20
	199	SOL23	8/20/2009	8/25/2009	<7	<20
	200	SOL23-C	8/20/2009	8/25/2009	<7	<20
	208	SOL24	8/20/2009	8/25/2009	<7	<20

Table 1 Notes: Ambient Air Monitoring Results, Monterey, Santa Clara, and San

Benito Counties 2009

If the analytical result is <MDL it is reported as less than the established method detection limit multiplied by the dilution factor. Results are reported to one significant figure. If the analytical result is \geq MDL and < EQL it is reported in the table as the measured value to one significant figure. Levels at or above the EQL are reported as the actual measured value and are reported to two significant figures.

ng/sample = nanograms per sample

Sample ID (Sample identification) numbers followed by the letters C are collocated samples for the samples with the corresponding number.

Site location identification:

CHU:	Chualar
GIL:	Gilroy
HOL:	Hollister
KCY:	King City
SAL:	Salinas
SOL:	Soledad

Table 2: Ambient Air Monitoring Duplicate Results
Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Analysis Date	Diazinon Concentration (ng/sample)	Diaxon Concentration (ng/sample)	Diazinon Relative Per cent Difference	Diaxon Relative Per cent Difference
Chualar	82	CHU10	7/28/2009	<7	<20	na	na
	82D	CHU10-D	7/28/2009	<7	<20	na	na
	121	CHU14	8/5/2009	<7	<20	na	na
	121D	CHU14D	8/5/2009	<7	<20	na	na
Gilroy	20	GIL3	7/13/2009	<7	<20	na	na
	20D	GIL3D	7/13/2009	<7	<20	na	na
	29	GIL4	7/14/2009	<7	<20	na	na
	29D	GIL4D	7/14/2009	<7	<20	na	na
	47	GIL6	7/20/2009	<7	<20	na	na
	47D	GIL6D	7/20/2009	<7	<20	na	na
	59	GIL7	7/21/2009	<7	<20	na	na
	59D	GIL7D	7/21/2009	<7	<20	na	na
	100	GIL12	8/3/2009	<7	<20	na	na
	100D	GIL12D	8/3/2009	<7	<20	na	na
	112	GIL13	8/4/2009	72.9	20.2	-1.55	0.15
	112D	Gil13D	8/4/2009	74.0	20.1	-3.85	na
	131	GIL16	8/10/2009	15.3	<20	na	na
	131D	GIL16D	8/10/2009	15.9	<20	na	na
	145	GIL17	8/11/2009	<7	<20	na	na
	145D	GIL17D	8/11/2009	<7	<20	na	na
	159	GIL19	8/17/2009	<7	<20	na	na
	159D	GIL19D	8/17/2009	<7	<20	na	na
	171	GIL20	8/18/2009	<7	<20	na	na
	171D	GIL20D	8/18/2009	<7	<20	na	na
	184	GIL22	8/25/2009	<7	<20	na	na
	184d	GIL22D	8/25/2009	<7	<20	na	na
	195	GIL23	8/25/2009	<7	<20	na	na
	195D	GIL23D	8/25/2009	<7	<20	na	na
King City	1	KCY1	7/6/2009	<7	<20	na	na
	1D	KCY1D	7/6/2009	<7	<20	na	na
	8	KCY2	7/7/2009	<7	<20	na	na
	8D	KCY2D	7/7/2009	<7	<20	na	na
	72	KCY9	7/27/2009	<7	<20	na	na
Salinas	72D	KCY9-D	7/27/2009	<7	<20	na	na
	91	KCY11	7/29/2009	<7	<20	na	na
	91D	KCY11-D	7/29/2009	<7	<20	na	na

Table 3: Ambient Air Monitoring Co-Located Results
Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Analysis Date	Diazinon Concentration (ng/sample)	Diazoxon Concentration (ng/sample)	Relative Per cent Difference Diazinon	Relative Per cent Difference Diazoxon
Chualar	12	CHU2	7/7/2009	<7	<20		
	13	CHU2-C	7/7/2009	<7	<20	na	na
	35	CHU4	7/14/2009	<7	<20		
	36	CHU4-C	7/14/2009	<7	<20	na	na
	53	CHU6	7/20/2009	28.6	50.2		
	54	CHU6-C	7/20/2009	26.7	48.6	6.83	3.34
	82	CHU10	7/28/2009	<7	<20		
	83	CHU10-C	7/28/2009	<7	<20	na	na
	106	CHU12	8/3/2009	18.9	<20		
	107	CHU12C	8/3/2009	21.4	<20	-12.52	na
	149	CHU17	8/11/2009	12.8	<20		
	150	CHU17C	8/11/2009	11.7	<20	8.80	na
	165	CHU19	8/17/2009	<7	<20		
	166	CHU19C	8/17/2009	<7	<20	na	na
	201	CHU23	8/25/2009	<7	<20	na	na
	202	CHU23-C	8/25/2009	<7	<20	na	na
Gilroy	17	GIL2	7/7/2009	<7	<20		
	18	GIL2-C	7/7/2009	<7	<20	na	na
	29	GIL4	7/14/2009	<7	<20		
	30	GIL4-C	7/14/2009	<7	<20	na	na
	47	GIL6	7/20/2009	<7	<20		
	48	GIL6-C	7/20/2009	<7	<20	na	na
	88	GIL10	7/28/2009	<7	<20		
	89	GIL10-C	7/28/2009	<7	<20	na	na
	100	GIL12	8/3/2009	<7	<20		
	101	GIL12-C	8/3/2009	<7	<20	na	na
	145	GIL17	8/11/2009	<7	<20		
	146	GIL17C	8/11/2009	<7	<20	na	na
	159	GIL19	8/17/2009	<7	<20		
	160	GIL19C	8/17/2009	<7	<20	na	na
	195	GIL23	8/25/2009	<7	<20	na	na
	196	GIL23-C	8/25/2009	<7	<20	na	na
Holister	5	HOL1	7/6/2009	<7	<20		
	6	HOL1-C	7/6/2009	<7	<20	na	na
	39	HOL4	7/15/2009	<7	<20		
	40	HOL4-C	7/15/2009	<7	<20	na	na
	57	HOL6	7/20/2009	<7	<20		
	58	HOL6-C	7/20/2009	<7	<20	na	na
	86	HOL10	7/28/2009	<7	<20		
	87	HOL10-C	7/28/2009	<7	<20	na	na
	110	HOL12	8/3/2009	<7	<20		
	111	HOL12-C	8/3/2009	<7	<20	na	na
	141	HOL16	8/10/2009	<7	<20		
	142	HOL16C	8/10/2009	<7	<20	na	na
	169	HOL19	8/17/2009	<7	<20		
	170	HOL19C	8/17/2009	<7	<20	na	na
	192	HOL22	8/25/2009	<7	<20	na	na
	193	HOL22-C	8/25/2009	<7	<20	na	na

Table 3: Ambient Air Monitoring Co-Located Results
Monterey, Santa Clara and San Benito Counties
2009

Site Name	Sample Log Number	Sample ID	Analysis Date	Diazinon Concentration (ng/sample)	Diazoxon Concentration (ng/sample)	Relative Per cent Difference Diazinon	Relative Per cent Difference Diazoxon
King City	8	KCY2	7/7/2009	<7	<20		
	9	KCY2-C	7/7/2009	<7	<20	na	na
	31	KCY4	7/14/2009	<7	<20		
	32	KCY4-C	7/14/2009	<7	<20	na	na
	49	KCY6	7/20/2009	<7	<20		
	50	KCY6-C	7/20/2009	<7	<20	na	na
	78	KCY10	7/27/2009	<7	<20		
	79	KCY10-C	7/27/2009	<7	<20	na	na
	102	KCY12	8/3/2009	<7	<20		
	103	KCY12-C	8/3/2009	<7	<20	na	na
	133	KCY16	8/10/2009	<7	<20		
	134	KCY16C	8/10/2009	<7	<20	na	na
	161	KCY19	8/17/2009	<7	<20		
	162	KCY19C	8/17/2009	<7	<20	na	na
	197	KCY23	8/25/2009	<7	<20		
	198	KCY23-C	8/25/2009	<7	<20	na	na
Salinas	14	SAL2	7/7/2009	<7	<20		
	15	SAL2-C	7/7/2009	<7	<20	na	na
	37	SAL4	7/14/2009	<7	<20		
	38	SAL4-C	7/15/2009	<7	<20	na	na
	55	SAL6	7/20/2009	16.4	41.5		
	56	SAL6-C	7/20/2009	15.8	41.9	3.53	-1.01
	84	SAL10	7/28/2009	<7	<20		
	85	SAL10-C	7/28/2009	<7	<20	na	na
	108	SAL12	8/3/2009	18.4	<20		
	109	SAL12-C	8/3/2009	20.4	<20	-10.2	na
	139	SAL16	8/10/2009	<7	<20		
	140	SAL16C	8/10/2009	<7	<20	na	na
	167	SAL19	8/17/2009	<7	<20		
	168	SAL19C	8/17/2009	<7	<20	na	na
	190	SAL22	8/25/2009	23.5	<20		
	191	SAL22-C	8/25/2009	22.5	<20	4.6	na
Soledad	10	SOL2	7/7/2009	<7	<20		
	11	SOL2-C	7/7/2009	<7	<20	na	na
	33	SOL4	7/14/2009	<7	<20		
	34	SOL4-C	7/14/2009	<7	<20	na	na
	51	SOL6	7/20/2009	15.7	45.1		
	52	SOL6-C	7/20/2009	15.8	44.8	-0.6	0.5
	80	SOL10	7/27/2009	<7	<20		
	81	SOL10-C	7/27/2009	<7	<20	na	na
	104	SOL12	8/3/2009	<7	<20		
	105	SOL12-C	8/3/2009	<7	<20	na	na
	135	SOL16	8/10/2009	<7	<20		
	136	SOL16-C	8/10/2009	<7	<20	na	na
	163	SOL19	8/17/2009	14.7	<20		
	164	SOL19-C	8/17/2009	17.5	<20	-17.1	na
	199	SOL23	8/25/2009	<7	<20		
	200	SOL23-C	8/25/2009	<7	<20	na	na

Table 2 and 3 Notes:

ID = Identification
ng = nanograms
na = not applicable
C = Co-located sample
D = Duplicate Analysis

**Table 4: Field and Laboratory QC Sample Results
Monterey, Santa Clara and San Benito Counties
2009**

Quality Control Sample Type	Sample ID	Date Analyzed	Diazinon Amount (ng/sample)	Diazinon recovery (72)	Diazoxon Amount (ng/sample)	Diazoxon recovery (130)
Lab Spike	LS071309	7/13/2009	83.2	115.5	127.9	98.4
	LS072909	7/29/2009	88.7	123.1	118.0	90.8
	LS081009	8/10/2009	97.1	134.9	132.1	101.6
	LS082409	8/25/2009	99.7	138.5	142.9	109.9

Field Spike	PS021	7/13/2009	74.5	103.5	135.5	104.2
	PS094	7/29/2009	75.5	104.8	106.9	82.2
	PS098	7/29/2009	68.8	95.6	106.3	81.8
	PS132	8/10/2009	101.0	140.3	136.6	105.1
	PS138	8/10/2009	109.0	151.4	132.7	102.0
	PS185	8/25/2009	92.0	127.8	144.0	110.7
	PS189	8/25/2009	99.6	138.3	141.6	108.9

Trip Spike	PS029	7/13/2009	84.6	117.5	135.8	104.4
	PS099	7/29/2009	87.0	120.8	130.6	100.5
	PS143	8/10/2009	101.7	141.3	134.0	103.1
	PS205	8/25/2009	92.5	128.4	152.5	117.3

Trip Blank	PS019	7/6/2009	<7	na	<20	na
	PS027	7/13/2009	<7	na	<20	na
	PS071	7/21/2009	<7	na	<20	na
	PS090	7/28/2009	<7	na	<20	na
	PS124	8/5/2009	<7	na	<20	na
	PS144	8/10/2009	<7	na	<20	na
	PS183	8/18/2009	<7	na	<20	na
	PS194	8/25/2009	<7	na	<20	na

Notes:

Values in () are the spike levels in ng/sample

ID= Identification

na= not applicable

ng= nanograms

Appendix A:
Standard Operating Procedure for Diazinon

California Environmental Protection Agency



**Standard Operating Procedure
Sampling and Analysis of Diazinon**

**Special Analysis Section
Northern Laboratory Branch
Monitoring and Laboratory Division**

November 2008

Version 2

Approved by:

Russell Grace, Manager
Special Analysis Section

1. SCOPE

This method is for the sampling and analysis of Diazinon in air samples using a six-liter Silco™ canister for sample collection. Collected samples are analyzed by gas chromatography using an automated cryogenic sampler.

2. SUMMARY OF METHOD

Air samples are collected in evacuated six-liter Silco™ canisters. The samples are collected automatically using a Tisch Environmental automatic sample collection system. Final pressures after collection are greater than ambient pressures. After collection, samples are analyzed using a Wasson ECE Instrumentation cryogenic sample concentrator and an Agilent 7890A gas chromatograph equipped with a flame photometric detector in the phosphorus mode. Confirmation of positive results is determined using an Agilent 5973 GC/MSD operated in the single ion monitoring mode (SIM). Sample analysis and quantitation uses an external standard method for instrument calibration. The estimated quantitation level (EQL) for this method is approximately 8.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) prior to any sample dilution.

3. INTERFERENCES / LIMITATIONS

Method interference may be caused by contaminants in the Silco™ canisters or the Tisch sampler that can lead to discrete artifacts or elevated baselines. Analysis of samples containing high concentrations of early eluting components may cause significant contamination of the analytical equipment. A system blank must be analyzed with each batch of samples to detect any possible method or instrument interference.

4. EQUIPMENT AND CONDITIONS

A. Instrumentation:

Agilent Instruments 7890A gas chromatograph(GC) with a flame photometric detector (FPD) equipped with a phosphorus filter.

GC Column:

J&W GS Gaspro 30 meters by 0.32 millimeter ID (or equivalent)

GC Temperature Program:

Initial temperature 0 degrees centigrade ($^{\circ}\text{C}$) for 5 minutes
0 to 60 $^{\circ}\text{C}$ at 5 $^{\circ}\text{C}/\text{min}$
60 to 100 $^{\circ}\text{C}$ at 50 $^{\circ}\text{C}/\text{min}$

GC Inlet Parameters:

Pressure at 12.78 pounds per square inch (psi)
Flow at 2.0 ml/min

GC Detector FPD:

Heater at 225 ° C
Hydrogen Flow at 75 ml/min
Air Flow at 100 ml/min
Makeup Flow at 58 ml/min

Wasson ECE cryogenic sample concentrator with Nafion dryer:
Cryo Temp #1 at -140° C
Cryo Temp #2 at -150° C
Sample Oven at 200 ° C
Transferline Temp at 150° C
Mass Flow at 35 ml/min
Line Purge Time 30 seconds

Agilent 5973 mass selective detector (MSD) with a 6890 GC
Acquisition Mode: SIM
Tune File: PFTBA autotune
Ions monitored: 31.0, 33.0, 34.0
Quant Ion: 34.0

B. Auxiliary Apparatus

Restek six liter Silco™ canisters with Silco™ valves

C. Reagents

Diazinon gas at 10 ppm +/-2% H.P. Gas Products, Inc.

D. Gases

Helium, grade 5 or better
Liquid Nitrogen at 22 pounds per square inch (psi)
Nitrogen, grade 5
Compressed air, ultra zero
Hydrogen, supplied by a Whatman Hydrogen generator

5. SAMPLE COLLECTION

- A. Samples are collected using a Tisch Environmental automated sampler set to deliver ambient air over a fixed amount of time (3 to 12 hours depending on sampler location).
- B. Six liter canisters will be filled so the ending pressure will be above ambient in the range of 10 to 20 psig (psi gauge).
- C. Diazinon is stable for at least five days when kept at ambient temperatures .
See section 8F for storage stability summary.

6. ANALYSIS OF SAMPLES

- a) Connect each canister to a port on the Wasson ECE cryoconcentrator using a short length of polypropylene tubing. Reserve ports one and two for the blank and calibration standard.
- b) For this method the standard volume will be 100 milliliters.
- c) Perform an initial calibration curve using the following volumes of known concentrations of Diazinon: 15, 25, 50, 75, 100 milliliters. At least five (5) points must be analyzed to establish a calibration curve. Appendix 1 lists the standard concentrations used when the EQL is approximately 8.0 $\mu\text{g}/\text{m}^3$.
- d) Prepare a sample sequence for the GC. The sequence should include a system blank and a continuing calibration verification standard (CCV) for every ten (10) samples analyzed. If this batch of samples includes a method blank and /or LCS, they should be run prior to field samples to verify that QC criteria have been met.
- e) To minimize excessive carry over of contaminants from one analysis to the next, a system blank should be run after every twenty (20) samples or more frequently if indicated by sample chromatograms. In no case should a sample contaminant interfere with the peaks of interest. This will be verified by the absence of a peak in the analyte retention time window during the system blank analysis.
- f) Review and edit the quantitation reports as needed.
- g) Rerun samples with results greater than the EQL by GC/MSD to confirm the presence of Diazinon.
- h) Samples with concentration greater than the upper point of the calibration curve must be run at a smaller volume. Every attempt should be made to have the results fall within the upper half of the calibration curve. If running a volume of 15 mls results in a value greater than the upper calibration point, then the sample will need to be diluted with compressed nitrogen. Either add nitrogen to the original canister being sure to record the beginning and ending pressures, or transfer a known amount of sample from the original canister into a clean fully evacuated canister. Pressurize with nitrogen again recording the final pressure.
- i) The final results will be adjusted by an appropriate dilution factor and reported in $\mu\text{g}/\text{m}^3$.
- j) The atmospheric concentration is calculated as follows:

$$\text{Ambient Sample Conc. } (\mu\text{g}/\text{m}^3) = \frac{\text{Sample Vol (ml)} \times \text{Instrument result } (\mu\text{g}/\text{m}^3)}{100 \text{ ml}} \times \text{Dilution Factor}$$

- k) Given instrument sensitivity and a minimum sample volume of 15 ml the EQL for this method will be approximately 8.0 $\mu\text{g}/\text{m}^3$.

7. QUALITY ASSURANCE

A. Instrument Reproducibility

Establish the reproducibility of the instrument and analytical method as follows: Analyze three different volumes of standard (low, medium, and high levels) by injecting each five times. Table 1 lists the results for the Diazinon instrument reproducibility.

TABLE 1
INSTRUMENT REPRODUCIBILITY
Diazinon ($\mu\text{g}/\text{m}^3$)

Low Level (15ml)	Medium Level (50ml)	High Level (100ml)	
7.74	25.9	51.1	
7.69	25.9	58.3	
7.75	25.4	54.2	
8.26	27.2	52.6	
7.79	26.9	52.6	

7.846	26.26	53.76	Average
0.234	0.757	2.765	Std Dev
2.984	2.883	5.142	RSD

B. Linearity

A five point calibration is performed. Calibration standards ranging from at or near the EQL to approximately 7 times higher are used for Diazinon. The results are used to calculate calibration curves using linear or quadratic regression. An r^2 of 0.995 or higher is required for an initial calibration to be acceptable. See Appendix 1 for an example calibration curve. A CCV will be run at the start of each analytical batch, and after every tenth sample to verify the system linearity. The CCV quantitated value must be within 25% of the actual value.

C. Method Detection Limit

Method detection limits (MDL) are based on the US EPA MDL calculation. Using the analysis of seven replicates of a low-level standard, the MDL and EQL for Diazinon are calculated as follows:

$$\text{MDL} = 3.143 * \text{STD}$$

$$EQL = 5 * MDL$$

STD equals the standard deviation of the calculated results for the seven replicate spikes. The calculated MDL for Diazinon is 0.743 $\mu\text{g}/\text{m}^3$ based on a 100 ml sample analysis volume. The EQL for Diazinon based on the MDL would be approximately 4.0 $\mu\text{g}/\text{m}^3$. Although statistically achievable, based on the daily standard concentration of approximately 50 $\mu\text{g}/\text{m}^3$ and the smallest volume to be sampled, 15 ml, the actual lowest concentration analyzed will be approximately 8.0 $\mu\text{g}/\text{m}^3$. Thus the EQL for reporting results will be approximately 8.0 $\mu\text{g}/\text{m}^3$. Since the EQL used is based on the calibration curves high point, the MDL will also be effected by the same factor which in most case is approximately two. Thus the MDL used for this analyte will be around 1.5 $\mu\text{g}/\text{m}^3$.

D. Laboratory Control Sample

A laboratory control sample (LCS) is included with each analytical batch. The LCS stock standard should come from a different source or lot than the daily calibration standards. The analytical value of the LCS must be within three standard deviations of its historical mean. If the LCS is outside these limits then the samples in the analytical batch must be reanalyzed. The LCS is prepared like the calibration standards using a volume of standard that will result in a final concentration that is in the middle of the calibration curve, in this case approximately 30 $\mu\text{g}/\text{m}^3$.

E. Storage Stability

Storage stability was determined for Diazinon by spiking an evacuated canister and collecting ambient air using the Tisch Environmental sampler. This sample was then analyzed on the following days: 0, 1, 5, 13, and 25 days. Table 2 lists the results for the storage stability study.

Table 2
Storage Stability Study
Diazinon 2008

Day	Sample 1 %recovery	Sample 2 %recovery	Sample 3 %recovery	Average %recovery	Standard Dev
0	87.17	89.52	100.31	92.34	7.008
1	89.40	97.85	94.12	93.79	4.235
5	92.94	93.29	94.52	93.58	0.828
13	60.30	62.30	61.02	61.21	1.013
25	48.43	49.12	47.82	48.46	0.650

Because there is a significant loss between day 5 and 13 all samples should be analyzed within 5 to 6 days of sampling.

H. Safety

This procedure does not address all of the safety concerns associated with chemical analysis. It is the responsibility of the analyst to establish appropriate safety and health practices. For hazard information and guidance refer to the material safety data sheets (MSDS) of any chemicals used in this procedure. Diazinon gas is highly toxic at levels greater than 11.5 mg/kg of body weight. All prep of standards and expected high samples should be performed in a shielded fume hood.

Appendix 1

Calibration Standard Preparation for Diazinon

The certified gas standard used for calibration was purchased from H.P. Gas Products, Inc., Baytown, Texas and has the following specification:

Cylinder No: CC177430
Expiration date: December 10, 2008
Diazinon: 10 ± 2 ppm

The calibration standard is made by taking an aliquot of the stock standard (10ppm) and diluting in a six liter Silco™ canister with nitrogen. A typical dilution is as follows:

75ml of Diazinon (10ppm) at $13,906 \mu\text{g}/\text{m}^3$
[$\mu\text{g}/\text{m}^3 = \text{ppm} \times \text{molecular weight} \times 40.90$]

Pressurize canister to approximately 30 psig
[Volume in ml = (Final Pressure (psig)/14.7 psig x 6000ml) + 6000ml]

Resulting concentration in can is approximately $57 \mu\text{g}/\text{m}^3$
Final concentration $\mu\text{g}/\text{m}^3 = \text{vol of std/vol in canister} \times \text{std conc } (\mu\text{g}/\text{m}^3)$

A minimum of five sample volumes are used to generate the calibration curve, with the standard at 15 ml being the low point. The sample volumes for the calibration curve are 15, 25, 50, 75, 100 ml. The 100ml represents a concentration of $57 \mu\text{g}/\text{m}^3$. The low point (15ml) equates to approximately $8.5 \mu\text{g}/\text{m}^3$.

All continuing calibration verification standards (CCV) are run at 15 ml, while all samples are run at 100 ml.

Initial calibration curve acceptance requires an r^2 of at least 0.995.

APPENDIX D

Diazinon/Diaxon Ambient Field Log Sheets

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials	
			Start	End		Start	End		Start	End			Start	End	Start	End
001	KCY1	PS-12A	7/1/09 9:30	7/2/09 8:50	23:20	47.0	1442.0	23.25	2.98	2.84	2.94		C	C	JR	JR
002	SOL1	PS11A	7/1/09 10:40	7/2/09 9:45	23:05	57.0	1442.0	23.08	2.97	3.24	3.13		C	C	JR	JR
003	CHU1	PS14A	7/1/09 11:25	7/2/09 10:30	23:05	5118.3	5141.3	23.00	2.98	3.20	3.12		C	C	JR	JR
004	SAL1	PS03A	7/1/09 12:15	7/2/09 11:40	23:25	3814.8	3838.1	23.38	2.98	3.23	3.13		C	C	JR	JR
005	HOL1	PS02A	7/1/09 13:30	7/2/09 12:40	23:10	612.7	635.8	23.18	2.85	3.25	3.08		C	C	JR	JR
006	HOL1-C	PS02B	7/1/09 13:30	7/2/09 12:45	23:15	612.7	635.9	23.21	2.97	3.24	3.13		C	C	JR	JR
007	GIL1	PS01A	7/1/09 14:25	7/2/09 13:50	23:25	76.6	1484.9	23.47	2.95	3.54	3.27		C	C	JR	JR
008	KCY2	PS12A	7/2/09 9:00	7/3/09 8:17	23:17	1451.0	2848.5	23.29	2.99	3.06	3.05		C	C	JR	JR
009	KCY2-C	PS12B	7/2/09 9:00	7/3/09 8:18	23:18	1451.0	2848.3	23.29	2.98	3.00	3.02		C	C	JR	JR
010	SOL2	PS11A	7/2/09 9:50	7/3/09 9:08	23:18	1448.0	2844.5	23.28	2.98	2.90	2.97		C	C	JR	JR
011	SOL2-C	PS11B	7/2/09 9:50	7/3/09 9:09	23:19	1448.0	2845.8	23.30	2.98	2.97	3.00		C	C	JR	JR
012	CHU2	PS14A	7/2/09 10:35	7/3/09 9:49	23:14	5141.4	5164.6	23.20	2.98	2.97	3.00		C	C	JR	JR
013	CHU2-C	PS14B	7/2/09 10:35	7/3/09 9:52	23:17	5141.4	5164.7	23.24	2.99	3.00	3.02		C	C	JR	JR
014	SAL-2	PS03A	7/2/09 11:45	7/3/09 10:50	23:05	3838.3	3861.3	23.05	2.99	2.98	3.01		C	C	JR	JR
015	SAL2-C	PS03B	7/2/09 11:45	7/3/09 10:52	23:07	3838.3	3861.3	23.08	2.98	2.99	3.01		C	C	JR	JR
016	HOL2	PS02A	7/2/09 12:50	7/3/09 11:53	23:03	636.0	659.0	23.00	2.99	2.94	2.99		C	C	JR	JR
017	GIL2	PS01A	7/2/09 13:55	7/3/09 12:55	23:00	1490.0	2870.0	23.0	2.98	2.94	2.99		C	C	JR	JR
018	GIL2-C	PS01B	7/2/09 13:55	7/3/09 12:56	23:01	1490.0	2870.0	23.0	2.98	2.95	2.99		C	C	JR	JR
019	TB1	N.A.	7/3/09 0:00	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		C	N.A.	JR	N.A.
020	GIL3	PS01A	7/6/09 8:50	7/7/09 8:20	23:30	2870.0	4279.9	23.50	2.97	2.92	2.97		K	K	SRR	SRR
021	GIL3-FS1	PS01B	7/6/09 8:50	7/7/09 8:20	23:30	2870.0	4279.9	23.50	2.97	2.93	2.98		K	K	SRR	SRR
022	KCY3	PS12A	7/6/09 10:29	7/7/09 9:52	23:23	2849.7	4252.9	23.39	2.97	2.93	2.98	2	K	K	SRR	SRR

MFM Used #: 2-5063 Slope: 1.003

Intercept: 0.018

Italicized counter entries are in minutes instead of hours.

2. Counter in minutes instead of hours and tenths of an hour.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1 lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials	
			Start	End		Start	End		Start	End			Start	End	Start	End
023	SOL3	PS11A	7/6/09 11:28	7/7/09 10:46	23:18	2847.1	4244.0	23.28	2.97	2.94	2.98	3	K	K	SRR	SRR
024	CHU3	PS14A	7/6/09 12:09	7/7/09 11:22	23:13	5164.7	5187.9	23.23	2.97	2.94	2.98	4	K	K	SRR	SRR
025	SAL3	PS02A	7/6/09 13:03	7/7/09 12:10	23:07	13861.4	13884.5	23.11	2.97	3.04	3.03		K	K	SRR	SRR
026	HOL3	PS02A	7/6/09 14:06	7/7/09 13:06	23:00	659.0	682.0	23.01	2.97	2.94	2.98		K	K	SRR	SRR
027	TB2	N.A.	7/7/09 7:30	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	SRR	N.A.
028	TS1	N.A.	7/7/09 7:31	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	SRR	N.A.
029	GIL4	PS01A	7/7/09 8:25	7/8/09 7:25	23:00	576.9	599.9	22.99	2.98	3.00	3.02	1	K	F	SRR	SRR
030	GIL4-C	PS01B	7/7/09 8:25	7/8/09 7:25	23:00	576.9	599.9	22.99	2.97	2.98	3.00		K	F	SRR	SRR
031	KCY4	PS12A	7/7/09 9:56	7/8/09 8:56	23:00	4252.9	5633.0	23.00	2.97	3.14	3.08	5	K	P	SRR	SRR
032	KCY4-C	PS12B	7/7/09 9:56	7/8/09 8:56	23:00	4252.9	5633.0	23.00	2.97	3.08	3.05		K	P	SRR	SRR
033	SOL4	PS11A	7/7/09 10:47	7/8/09 9:47	23:00	4244.0	5624.0	23.00	2.97	2.92	2.97		K	P	SRR	SRR
034	SOL4-C	PS11B	7/7/09 10:47	7/8/09 9:47	23:00	4244.0	5624.0	23.00	2.97	3.08	3.05		K	P	SRR	SRR
035	CHU4	PS14A	7/7/09 11:24	7/8/09 10:24	23:00	5187.9	5210.9	23.01	2.97	2.93	2.98		K	K	SRR	SRR
036	CHU4-C	PS14B	7/7/09 11:24	7/8/09 10:24	23:00	5187.9	5210.9	23.01	2.97	2.95	2.99		K	K	SRR	SRR
037	SAL4	PS03A	7/7/09 12:11	7/8/09 11:11	23:00	13884.5	13907.5	23.00	2.97	2.45	2.74		K	K	SRR	SRR
038	SAL4-C	PS03B	7/7/09 12:11	7/8/09 11:11	23:00	13884.5	13907.5	23.00	2.97	2.49	2.76		K	K	SRR	SRR
039	HOL4	PS02A	7/7/09 13:09	7/8/09 12:09	23:00	682.0	705.0	23.01	2.97	2.90	2.96		K	K	SRR	SRR
040	HOL4-C	PS02B	7/7/09 13:09	7/8/09 12:09	23:00	682.0	705.0	22.99	2.97	2.92	2.97		K	K	SRR	SRR
041	GIL5	PS01A	7/8/09 7:28	7/9/09 6:28	23:00	599.9	622.9	22.99	2.97	2.90	2.96		F	F	SRR	SRR
042	KCY5	PS12A	7/8/09 8:58	7/9/09 7:58	23:00	5633.1	7013.5	23.01	2.97	2.93	2.98		P	F	SRR	SRR
043	SOL5	PS11B	7/8/09 9:50	7/9/09 8:50	23:00	5624.5	7006.0	23.03	2.97	3.09	3.06		P	K	SRR	SRR
044	CHU5	PS14A	7/8/09 10:26	7/9/09 9:26	23:00	5210.9	5233.9	23.01	2.97	2.93	2.98		K	K	SRR	SRR

MFM Used #: 2-5063 Slope: 1.003

Intercept: 0.018

Italicized counter entries are in minutes instead of hours.

1. Replaced counter. 3. Counter in minutes not hours and tenths. 4. Found sunshield on roof at removal. 5. Added pump exhaust mufflers.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In	Counter		Elapsed Time In	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather		Initials		
			Start	End		Hours:Mins	Start	End	Hours	Start	End		K,P,C,F&R	Start	End		
													Start	End			
045	SAL5	PS03A	7/8/09 11:13	7/9/09 10:13	23:00		3907.5	3930.5	22.99	2.97	2.92	2.97		K	K	SRR	SRR
046	HOL5	PS02A	7/8/09 12:11	7/9/09 11:11	23:00		705.1	728.0	22.99	2.97	2.97	3.00		K	K	SRR	SRR
047	GIL6	PS01A	7/13/09 8:15	7/14/09 7:25	23:10		622.9	646.1	23.16	2.97	2.92	2.97		K	K	NTA	NTA
048	GIL6C	PS01B	7/13/09 8:15	7/14/09 7:25	23:10		622.9	646.1	23.16	2.97	2.97	3.00		K	K	NTA	NTA
049	KCY6	PS12A	7/13/09 9:45	7/14/09 8:55	23:10		7013.5	7013.5	0.00	2.97	2.89	2.96	6	K	K	NTA	NTA
050	KCY6C	PS12B	7/13/09 9:45	7/14/09 8:55	23:10		7013.5	7013.5	0.00	2.97	2.95	2.99	6	K	K	NTA	NTA
051	SOL6	PS11A	7/13/09 10:26	7/14/09 9:42	23:16		7009.8	8405.2	23.26	2.97	3.00	3.01		K	K	NTA	NTA
052	SOL6C	PS11B	7/13/09 10:26	7/14/09 9:42	23:16		7009.8	8405.2	23.26	2.97	3.00	3.01		K	K	NTA	NTA
053	CHU6	PS14A	7/13/09 10:53	7/14/09 10:20	23:27		5233.9	5257.4	23.45	2.97	2.92	2.97		K	K	NTA	NTA
054	CHU6C	PS14B	7/13/09 10:53	7/14/09 10:20	23:27		5233.9	5257.4	23.45	2.97	2.90	2.96		K	K	NTA	NTA
055	SAL6	PS03A	7/13/09 11:22	7/14/09 10:22	23:00		3930.5	3954.1	23.60	2.97	2.98	3.00	?	K	K	NTA	NTA
056	SAL6C	PS03B	7/13/09 11:22	7/14/09 10:22	23:00		3930.5	3954.1	23.60	2.97	2.97	3.00	?	K	K	NTA	NTA
057	HOL6	PS02A	7/13/09 12:04	7/14/09 11:04	23:00		728.1	751.7	23.65	2.97	3.00	3.01	?	K	K	NTA	NTA
058	HOL6C	PS02B	7/13/09 12:04	7/14/09 11:04	23:00		728.1	751.7	23.65	2.97	2.94	2.98	?	K	K	NTA	NTA
059	GIL7	PS01A	7/14/09 7:26	7/15/09 6:41	23:15		646.1	669.3	23.25	2.97	2.98	3.00		K	K	NTA	NTA
060	KCY7	PS12A	7/14/09 8:57	7/15/09 8:05	23:08		7013.5	8403.4	23.17	2.97	2.97	3.00		K	K	NTA	NTA
061	SOL7	PS11A	7/14/09 9:44	7/15/09 8:51	23:07		8405.2	9795.2	23.17	2.97	2.99	3.01		K	K	NTA	NTA
062	CHU7	PS14A	7/14/09 10:22	7/15/09 9:35	23:13		5257.4	5280.3	22.96	2.97	3.02	3.02	See # 7	K	K	NTA	NTA
063	SAL7	PS03A	7/14/09 10:57	7/15/09 10:05	23:08		3954.1	3977.2	23.10	2.97	2.89	2.96		K	K	NTA	NTA
064	HOL7	PS02A	7/14/09 11:45	7/15/09 10:53	23:08		751.7	774.8	23.11	2.97	3.03	3.03		K	K	NTA	NTA
065	GIL8	PS01A	7/15/09 6:42	7/16/09 6:27	23:45		669.3	693.1	23.77	2.97	3.03	3.03		K	K	NTA	NTA
066	KCY8	PS12A	7/15/09 8:06	7/16/09 7:44	23:38		8403.4	9821.4	23.63	2.97	3.00	3.01		K	K	NTA	NTA

MFM Used #: 2-5063 Slope: 1.003

Intercept: 0.018

Italicized counter entries are in minutes instead of hours.

6 = King City ETM did not start. Moved it on 14th and it started. ? = Errors between Elapsed Time & Elapsed Counter due to operator forgot their glasses.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather		Initials	
			Start	End		Start	End		Start	End			K,P,C,F&R	Start	End	Start
067	SOL8	PS11A	7/15/09 8:51	7/16/09 8:18	23:27	9795.2	11201.9	23.45	2.97	2.97	3.00		K	K	NTA	NTA
068	CHU8	PS14A	7/15/09 9:40	7/16/09 8:45	23:05	54.1	77.5	23.40	2.97	2.94	2.98	7	K	K	NTA	NTA
069	SAL8	PS03A	7/15/09 10:06	7/16/09 9:15	23:09	3977.2	4000.4	23.25	2.97	3.06	3.04	?	K	K	NTA	NTA
070	HOL8	PS02A	7/15/09 10:55	7/16/09 9:58	23:03	774.9	797.9	22.96	2.97	3.02	3.02		K	K	NTA	NTA
071	TB3	N.A.	7/16/09 10:10	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	NTA	N.A.
072	KCY9	PS12A	7/20/09 11:20	7/21/09 10:40	23:20	9827.0	11224.0	23.28	2.98	3.08	3.06		K	K	JR	JR
073	SOL9	PS11A	7/20/09 12:20	7/21/09 11:40	23:20	11203.0	12605.0	23.37	2.98	2.95	2.99	?2	K	K	JR	JR
074	CHU9	PS14A	7/20/09 13:00	7/21/09 12:25	23:25	77.5	100.9	23.41	2.98	2.96	3.00	8	K	K	JR	JR
075	SAL9	PS03A	7/20/09 13:40	7/21/09 13:05	23:25	4000.5	4023.9	23.43	2.99	2.97	3.01		K	K	JR	JR
076	HOL9	PS02A	7/20/09 14:28	7/21/09 13:55	23:27	797.9	821.4	23.51	2.98	2.98	3.01		K	K	JR	JR
077	GIL9	PS01A	7/20/09 15:15	7/21/09 14:45	23:30	693.1	716.7	23.55	2.98	2.99	3.01	?2	K	K	JR	JR
078	KCY10	PS12A	7/21/09 10:45	7/22/09 10:05	23:20	11233.0	12629.0	23.27	2.98	3.00	3.02		K	K	JR	JR
079	KCY10-C	PS12B	7/21/09 10:45	7/22/09 10:05	23:20	11233.0	12629.0	23.27	2.98	3.04			K	K	JR	JR
080	SOL10	PS11A	7/21/09 11:45	7/22/09 11:15	23:30	12609.0	14019.0	23.50	2.98	2.97	3.00		K	K	JR	JR
081	SOL10-C	PS11B	7/21/09 11:45	7/22/09 11:15	23:30	12609.0	14019.0	23.50	2.98	2.99	3.01		K	K	JR	JR
082	CHU10	PS14A	7/21/09 12:25	7/22/09 11:52	23:27	100.9	124.4	23.47	2.99	2.98	3.01		K	K	JR	JR
083	CHU10-C	PS14B	7/21/09 12:25	7/22/09 11:55	23:30	100.9	124.4	23.48	2.98	2.98	3.01		K	K	JR	JR
084	SAL10	PS03A	7/21/09 13:15	7/22/09 12:50	23:35	4024.0	4047.7	23.66	2.97	2.97	3.00	?2	K	K	JR	JR
085	SAL10-C	PS03B	7/21/09 13:15	7/22/09 12:53	23:38	4024.7	4047.7	22.97	2.98	2.97	3.00	?2	K	K	JR	JR
086	HOL10	PS02A	7/21/09 14:00	7/22/09 13:45	23:45	821.5	845.2	23.75	2.97	2.96	2.99		K	K	JR	JR
087	HOL10-C	PS02B	7/21/09 14:00	7/22/09 13:47	23:47	821.5	845.2	23.79	2.97	2.97	3.00		K	K	JR	JR
088	GIL10	PS01A	7/21/09 14:50	7/22/09 14:25	23:35	716.8	740.4	23.55	2.98	2.96	3.00		K	K	JR	JR

MFM Used #: 6-2240 Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

7 = ETM changed in error. 8. Found sun shield on roof. ? = Errors between Elapsed Time & Elapsed Counter due to operator forgot their glasses.

?2 = Operator recorded time or counter reading slightly off. Thus, differences between Elapsed Time & Elapsed Counter.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1 lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials	
			Start	End		Start	End		Start	End			Start	End	Start	End
089	GIL10-C	PS01B	7/21/09 14:50	7/22/09 14:27	23:37	716.8	740.4	23.58	2.98	2.96	3.00		K	K	JR	JR
090	TB4	N.A.	N.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	JR	N.A.
091	KCY11	PS12A	7/22/09 10:20	7/23/09 9:22	23:02	12645.0	14025.0	23.00	2.98	3.00	3.02		K	K	JR	JR
092	SOL11	PS11A	7/22/09 11:20	7/23/09 10:22	23:02	14025.0	15405.0	23.00	2.99	3.00	3.02		K	K	JR	JR
093	CHU11	PS14A	7/22/09 12:00	7/23/09 11:02	23:02	124.6	147.6	23.01	2.98	3.04	3.04		K	K	JR	JR
094	CHU11-FS	PS14B	7/22/09 12:00	7/23/09 11:02	23:02	124.6	147.6	23.01	2.90	3.00	2.98	9	K	K	JR	JR
095	SAL11	PS03A	7/22/09 13:00	7/23/09 12:02	23:02	4047.8	4070.8	23.00	2.98	2.92	2.98		K	K	JR	JR
096	HOL11	PS02A	7/22/09 13:45	7/23/09 12:47	23:02	845.3	868.3	22.97	2.98	3.00	3.02		K	K	JR	JR
097	GIL11	PS01A	7/22/09 14:30	7/23/09 13:32	23:02	740.5	763.5	23.00	3.00	3.07	3.06		K	K	JR	JR
098	GIL11-FS	PS01B	7/22/09 14:30	7/23/09 13:32	23:02	740.5	763.5	23.00	3.00	3.08	3.07		K	K	JR	JR
099	TS2	N.A.	7/23/09 16:47	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!		K	N.A.	JR	N.A.
100	GIL12	PS01A	7/27/09 9:00	7/28/09 8:00	23:00	763.5	786.5	23.00	2.97	3.06	3.04	11	K	C	SRR	SRR
101	GIL12-C	PS01B	7/27/09 9:00	7/28/09 8:00	23:00	763.5	786.5	23.00	2.97	3.04	3.03		K	C	SRR	SRR
102	KCY12	PS12A	7/27/09 10:27	7/28/09 9:27	23:00	14025.2	15405.1	23.00	2.97	3.32	3.17		K	PC	SRR	SRR
103	KCY12-C	PS12B	7/27/09 10:27	7/28/09 9:27	23:00	14025.2	15405.1	23.00	2.97	3.19	3.11		K	PC	SRR	SRR
104	SOL12	PS11A	7/27/09 11:08	7/28/09 10:08	23:00	15405.0	16785.0	23.00	2.97	3.42	3.22	10	K	K	SRR	SRR
105	SOL12-C	PS11B	7/27/09 11:08	7/28/09 10:08	23:00	15405.0	16785.0	23.00	2.97	3.38	3.20	10	K	K	SRR	SRR
106	CHU12	PS14A	7/27/09 11:49	7/28/09 10:49	23:00	147.6	170.6	23.00	2.97	3.36	3.19		K	PC	SRR	SRR
107	CHU12-C	PS14B	7/27/09 11:49	7/28/09 10:49	23:00	147.6	170.6	23.00	2.97	3.36	3.19		K	PC	SRR	SRR
108	SAL12	PS03A	7/27/09 12:23	7/28/09 11:23	23:00	4070.8	4093.8	23.00	2.97	3.49	3.26		K	C	SRR	SRR
109	SAL12-C	PS03B	7/27/09 12:23	7/28/09 11:23	23:00	4070.8	4093.8	23.00	2.97	3.54	3.28		K	C	SRR	SRR
110	HOL12	PS02A	7/27/09 13:05	7/28/09 12:05	23:00	868.3	891.3	23.00	2.97	3.76	3.39		K	PC	SRR	SRR

MFM Used #: 6-2240 Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

9. Found sun shield on roof. 10. Took 3 tubes till one worked. (Winds up it was probably the low bat. on MFM 5063.) 11. Found 5063 MFM reading very low @ AM removal.

11. (continued) Started using 20062240.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials		
			Start	End		Start	End		Start	End			Start	End	Start	End	
111	HOL12-C	PS02B	7/27/09 13:05	7/28/09 12:05	23:00	868.3	891.3	23.00	2.97	3.70	3.36			K	PC	SRR	SRR
112	GIL13	PS01A	7/28/09 8:05	7/29/09 7:30	23:25	786.5	809.9	23.42	2.97	2.97	3.00			C	C	SRR	SRR
113	KCY13	PS12A	7/28/09 9:29	7/29/09 8:56	23:27	15407.1	16813.8	23.45	2.98	3.00	3.02			PC	C	SRR	SRR
114	SOL13	PS11A	7/28/09 10:10	7/29/09 9:36	23:26	16785.0	18190.7	23.43	2.98	3.00	3.02			K	PC	SRR	SRR
115	CHU13	PS14A	7/28/09 10:51	7/29/09 10:21	23:30	170.6	194.1	23.50	2.98	2.97	3.00			PC	PC	SRR	SRR
116	SAL13	PS03A	7/28/09 11:25	7/29/09 10:50	23:25	4093.8	4117.2	23.40	2.98	2.98	3.01			C	PC	SRR	SRR
117	HOL13	PS02A	7/28/09 12:08	7/29/09 11:33	23:25	891.3	914.7	23.42	2.98	2.97	3.00			PC	K	SRR	SRR
118	GIL14	PS01A	7/29/09 7:30	7/30/09 6:55	23:25	809.9	833.3	23.40	2.98	2.97	3.00			C	C	SRR	SRR
119	KCY14	PS12A	7/29/09 8:56	7/30/09 8:21	23:25	16813.8	18218.9	23.42	2.98	2.98	3.01			C	C	SRR	SRR
120	SOL14	PS11A	7/29/09 9:36	7/30/09 9:01	23:25	18190.7	19595.8	23.42	2.98	3.04	3.04			PC	C	SRR	SRR
121	CHU14	PS14A	7/29/09 10:21	7/30/09 9:45	23:24	194.1	217.5	23.40	2.98	3.00	3.02			PC	C	SRR	SRR
122	SAL14	PS03A	7/29/09 10:50	7/30/09 10:15	23:25	4117.2	4140.6	23.42	2.98	3.00	3.02			PC	C	SRR	SRR
123	HOL14	PS02A	7/29/09 11:33	7/30/09 10:58	23:25	914.7	938.1	23.41	2.98	2.99	3.01			K	K	SRR	SRR
124	TB5	N.A.	7/29/09 6:50	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!			C	N.A.	SRR	N.A.
125	GIL15	PS01A	7/30/09 6:55	7/31/09 6:17	23:22	833.3	856.7	23.38	2.98	2.99	3.01			C	C	SRR	SRR
126	KCY15	PS12A	7/30/09 8:21	7/31/09 7:43	23:22	18218.9	19620.8	23.37	2.98	2.99	3.01			C	C	SRR	SRR
127	SOL15	PS11A	7/30/09 9:01	7/31/09 8:23	23:22	19595.8	20997.8	23.37	2.98	2.99	3.01			C	C	SRR	SRR
128	CHU15	PS14A	7/30/09 9:45	7/31/09 9:07	23:22	217.5	240.8	23.36	2.98	2.99	3.01			C	C	SRR	SRR
129	SAL15	PS03A	7/30/09 10:15	7/31/09 9:37	23:22	4140.6	4163.9	23.37	2.98	2.98	3.01			C	C	SRR	SRR
130	HOL15	PS02A	7/30/09 10:58	7/31/09 10:20	23:22	938.1	961.5	23.37	2.98	2.96	3.00			K	K	SRR	SRR
131	GIL16	PS01A	8/3/09 9:00	8/4/09 8:02	23:02	856.8	879.8	23.04	2.98	2.98	3.01			C	P	MM	MM
132	GIL16-FS	PS01B	8/3/09 9:00	8/4/09 8:02	23:02	856.8	879.8	23.04	2.98	3.00	3.02			C	P	MM	MM

MFM Used #: 6-2240

Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number			Elapsed Time In		Counter		Elapsed Time In		Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials	
			Date & Time		Hours:Mins		Start	End	Hours		Start	End			Start	End	Start	End
			Start	End														
133	KYC16	PS12A	8/3/09 10:35	8/4/09 10:02	23:27	19628.8	21035.8	23.45	2.98	2.93	2.98	2.98	2.98		P	K	MM	MM
134	KYC16-C	PS12B	8/3/09 10:35	8/4/09 10:02	23:27	19628.8	21035.8	23.45	2.98	3.14	3.09	3.09	3.09		P	K	MM	MM
135	SOL16	PS11A	8/3/09 11:29	8/4/09 10:46	23:17	21000.4	22397.6	23.29	2.98	2.99	3.01	3.01	3.01		K	K	MM	MM
136	SOL16-C	PS11B	8/3/09 11:29	8/4/09 10:46	23:17	21000.4	22397.6	23.29	2.98	2.97	3.00	3.00	3.00		K	K	MM	MM
137	CHU16	PS14A	8/3/09 12:12	8/4/09 11:21	23:09	240.9	264.0	23.15	2.98	2.98	3.01	3.01	3.01		K	K	MM	MM
138	CHU16-FS	PS14B	8/3/09 12:12	8/4/09 11:21	23:09	240.9	264.0	23.15	2.98	2.97	3.00	3.00	3.00		K	K	MM	MM
139	SAL16	PS03A	8/3/09 12:53	8/4/09 11:58	23:05	4164.0	4187.1	23.09	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
140	SAL16-C	PS03B	8/3/09 12:53	8/4/09 11:58	23:05	4164.0	4187.1	23.09	2.98	2.94	2.99	2.99	2.99		K	K	MM	MM
141	HOL16	PS02A	8/3/09 13:43	8/4/09 13:01	23:18	961.5	984.8	23.32	2.98	2.95	2.99	2.99	2.99		K	K	MM	MM
142	HOL16-C	PS02B	8/3/09 13:43	8/4/09 13:01	23:18	961.5	984.8	23.32	2.98	2.88	2.96	2.96	2.96		K	K	MM	MM
143	TS3	N.A.	8/3/09 13:53	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	#VALUE!	#VALUE!		K	N.A.	MM	N.A.
144	TB6	N.A.	8/3/09 13:53	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	#VALUE!	#VALUE!		K	N.A.	MM	N.A.
145	GIL17	PS01A	8/4/09 8:06	8/5/09 7:06	23:00	879.9	902.9	22.99	2.98	3.00	3.02	3.02	3.02		P	C	MM	MM
146	GIL17-C	PS01B	8/4/09 8:06	8/5/09 7:06	23:00	879.9	902.9	22.99	2.98	3.00	3.02	3.02	3.02		P	C	MM	MM
147	KYC17	PS12A	8/4/09 10:07	8/5/09 9:07	23:00	21036.2	22415.3	22.99	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
148	SOL17	PS11A	8/4/09 10:50	8/5/09 9:51	23:01	22398.3	23778.9	23.01	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
149	CHU17	PS14A	8/4/09 11:24	8/5/09 10:26	23:02	264.1	287.1	23.04	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
150	CHU17-C	PS14B	8/4/09 11:24	8/5/09 10:26	23:02	264.1	287.1	23.04	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
151	SAL17	PS03A	8/4/09 12:02	8/5/09 11:02	23:00	4187.1	4210.1	23.01	2.98	2.99	3.01	3.01	3.01		K	K	MM	MM
152	HOL17	PS02A	8/4/09 13:05	8/5/09 12:08	23:03	984.9	1007.9	23.03	2.98	3.00	3.02	3.02	3.02		K	K	MM	MM
153	GIL18	PS01A	8/5/09 7:09	8/6/09 6:09	23:00	902.9	925.9	23.00	2.98	2.96	3.00	3.00	3.00		C	C	MM	MM
154	KYC18	PS12A	8/5/09 9:09	8/6/09 8:09	23:00	22415.5	23795.3	23.00	2.98	3.00	3.02	3.02	3.02		K	P	MM	MM

MFM Used #: 6-2240

Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In			Elapsed Time In	Mass Flow Meter Display		Corrected Average Flow	Comment Number	Weather		Initials		
			Start	End		Hours:Mins	Start	End	Hours	Start	End		Start	End	Start	End	
155	SOL18	PS11A	8/5/09 9:53	8/6/09 8:53	23:00	23779.1	25158.7	22.99	2.98	2.97	3.00			K	C	MM	MM
156	CHU18	PS14A	8/5/09 10:30	8/6/09 9:30	23:00	287.1	310.1	22.98	2.98	3.00	3.02			K	R	MM	MM
157	SAL18	PS03A	8/5/09 11:03	8/6/09 10:03	23:00	4210.1	4233.1	22.98	2.98	2.98	3.01			K	P	MM	MM
158	HOL18	PS02A	8/5/09 12:10	8/6/09 11:10	23:00	1007.9	1030.9	22.99	2.98	2.98	3.01			K	C	MM	MM
159	GIL19	PS01A	8/10/09 9:14	8/11/09 8:14	23:00	925.9	948.9	23.00	2.98	3.07	3.05			K	P	SRR	SRR
160	GIL19-C	PS01B	8/10/09 9:14	8/11/09 8:14	23:00	925.9	948.9	23.00	2.98	3.08	3.06			K	P	SRR	SRR
161	KYC19	PS12A	8/10/09 10:46	8/11/09 9:46	23:00	23795.3	25175.4	23.00	2.98	3.06	3.05			P	P	SRR	SRR
162	KYC19-C	PS12B	8/10/09 10:46	8/11/09 9:46	23:00	23795.3	25175.4	23.00	2.98	3.07	3.05			P	P	SRR	SRR
163	SOL19	PS11A	8/10/09 11:35	8/11/09 10:35	23:00	25158.7	26538.8	23.00	2.98	3.09	3.06			P	P	SRR	SRR
164	SOL19-C	PS11B	8/10/09 11:35	8/11/09 10:35	23:00	25158.7	26538.8	23.00	2.98	3.09	3.06			P	P	SRR	SRR
165	CHU19	PS14A	8/10/09 12:08	8/11/09 11:08	23:00	310.1	333.1	23.00	2.98	3.00	3.02			P	P	SRR	SRR
166	CHU19-C	PS14B	8/10/09 12:08	8/11/09 11:08	23:00	310.1	333.1	23.00	2.98	3.00	3.02			P	P	SRR	SRR
167	SAL19	PS03A	8/10/09 12:47	8/11/09 11:47	23:00	4233.1	4256.1	23.00	2.98	3.00	3.02			P	P	SRR	SRR
168	SAL19-C	PS03B	8/10/09 12:47	8/11/09 11:47	23:00	4233.1	4256.1	23.04	2.98	2.99	3.01			P	P	SRR	SRR
169	HOL19	PS02A	8/10/09 13:36	8/11/09 12:36	23:00	1030.9	1053.9	23.00	2.98	2.99	3.01			P	K	SRR	SRR
170	HOL19-C	PS02B	8/10/09 13:36	8/11/09 12:36	23:00	1030.9	1053.9	23.00	2.98	2.98	3.01			P	K	SRR	SRR
171	GIL20	PS01A	8/11/09 8:17	8/12/09 7:17	23:00	948.9	971.9	23.00	2.98	2.98	3.01			P	P	SRR	SRR
172	KYC20	PS12A	8/11/09 9:49	8/12/09 8:49	23:00	25175.4	26555.4	23.00	2.98	2.98	3.01			P	K	SRR	SRR
173	SOL20	PS11A	8/11/09 10:37	8/12/09 9:37	23:00	26538.8	27918.7	23.00	2.98	2.96	3.00			P	P	SRR	SRR
174	CHU20	PS14A	8/11/09 11:10	8/12/09 10:10	23:00	333.1	356.1	23.00	2.98	2.96	3.00			P	P	SRR	SRR
175	SAL20	PS03A	8/11/09 11:49	8/12/09 10:49	23:00	4256.1	4279.1	22.99	2.98	2.97	3.00			P	P	SRR	SRR
176	HOL20	PS02A	8/11/09 12:38	8/12/09 11:38	23:00	1053.9	1076.9	23.00	2.98	2.94	2.99			K	K	SRR	SRR

MFM Used #: 6-2240

Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 ±0.1 lpm End Flow Criteria: 3.0 lpm ±20%

Log #	Sample Name	Sampler ID Number	Date & Time		Elapsed Time In Hours:Mins	Counter		Elapsed Time In Hours	Mass Flow Meter Display	Corrected Average Flow	Comment Number	Weather K,P,C,F&R		Initials			
			Start	End		Start	End					Start	End	Start	End		
177	GIL21	PS01A	8/12/09 7:17	8/13/09 6:22	23:05	971.9	995.0	23.08	2.98	2.99	3.01			P	K	SRR	SRR
178	KYC21	PS12A	8/12/09 8:49	8/13/09 7:54	23:05	26555.4	27940.3	23.08	2.98	2.99	3.01			K	K	SRR	SRR
179	SOL21	PS11A	8/12/09 9:37	8/13/09 8:42	23:05	27918.7	29303.7	23.08	2.98	2.98	3.01			P	P	SRR	SRR
180	CHU21	PS14A	8/12/09 10:10	8/13/09 9:15	23:05	356.1	379.2	23.08	2.98	2.98	3.01			P	P	SRR	SRR
181	SAL21	PS03A	8/12/09 10:49	8/13/09 9:54	23:05	4279.1	4302.1	23.09	2.98	3.00	3.02			P	P	SRR	SRR
182	HOL21	PS02A	8/12/09 11:38	8/13/09 10:43	23:05	1076.9	1100.0	23.08	2.98	2.97	3.00			K	K	SRR	SRR
183	TB7	N.A.	8/13/09 7:14	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!			P	N.A.	SRR	N.A.
184	GIL22	PS01A	8/17/09 10:58	8/18/09 10:10	23:12	995.1	1018.3	23.17	2.98	3.00	3.02			K	K	JR	JR
185	GIL22-FS	PS01B	8/17/09 10:58	8/18/09 10:10	23:12	995.1	1018.3	23.17	2.97	3.00	3.01			K	K	JR	JR
186	KCY22	PS12A	8/17/09 12:25	8/18/09 11:50	23:25	27943.0	29347.0	23.40	2.98	3.00	3.02			K	K	JR	JR
187	SOL22	PS11A	8/17/09 13:30	8/18/09 12:45	23:15	29305.0	30702.0	23.28	2.97	3.00	3.01			K	K	JR	JR
188	CHU22	PS14A	8/17/09 14:05	8/18/09 13:30	23:25	379.2	402.6	23.40	2.99	2.97	3.01			K	K	JR	JR
189	CHU22-FS	PS14A	8/17/09 14:05	8/18/09 13:30	23:25	379.2	402.6	23.40	2.99	2.98	3.01			K	K	JR	JR
190	SAL22	PS03A	8/17/09 14:45	8/18/09 14:15	23:30	4302.2	4325.7	23.46	2.98	2.97	3.00			K	P	JR	JR
191	SAL22-C	PS03B	8/17/09 14:45	8/18/09 14:15	23:30	4302.2	4325.7	23.46	2.99	3.00	3.02			K	P	JR	JR
192	HOL22	PS02A	8/17/09 15:30	8/18/09 15:10	23:40	1100.0	1123.7	23.66	2.98	2.99	3.01			K	K	JR	JR
193	HOL22-C	PS02B	8/17/09 15:30	8/18/09 15:10	23:40	1100.0	1123.7	23.66	2.98	2.99	3.01			K	K	JR	JR
194	TB8	N.A.	8/17/09 20:00	N.A.	#VALUE!	N.A.	N.A.	#VALUE!	N.A.	N.A.	#VALUE!			K	N.A.	JR	N.A.
195	GIL23	PS01A	8/18/09 10:15	8/19/09 9:21	23:06	1018.3	1041.5	23.13	2.98	2.99	3.01			K	P	JR	JR
196	GIL23-C	PS01B	8/18/09 10:15	8/19/09 9:24	23:09	1018.3	1041.5	23.17	2.97	2.99	3.01			K	P	JR	JR
197	KCY23	PS12A	8/18/09 11:50	8/19/09 10:55	23:05	29349.0	30732.5	23.06	2.97	3.00	3.01			K	K	JR	JR
198	KCY23-C	PS12B	8/18/09 11:50	8/19/09 10:55	23:05	29349.0	30732.5	23.06	2.97	3.00	3.01			K	K	JR	JR

MFM Used #: 6-2240

Slope: 0.994

Intercept: 0.045

Italicized counter entries are in minutes instead of hours.

RESIN SORBENT TUBE FIELD LOG SHEET

Project: Diazinon and Propyzamide Ambient Air Monitoring

Start Flow Set: 3.0 \pm 0.1 lpm End Flow Criteria: 3.0 lpm \pm 20%

MFM Used #:

Slope:

Intercept:

Italicized counter entries are in minutes instead of hours.

APPENDIX E

Calibration and Certification Reports

CALIFORNIA AIR RESOURCES BOARD

FLOW CALIBRATION REPORT

TO: SPECIAL PURPOSE MONITORING
NEIL ADLER

LOG NUMBER : 2009 127

FROM: ROBERT RUSSELL\BRIAN SPREADBOROUGH
Program Evaluation & Standards

CALIBRATION DATE: 06/19/2009
REPORT DATE : 06/19/2009

IDENTIFICATION

Instrument : AALBORG
Position number : 1
Property No. : 20062240 Site Name : MLD Standards Lab
Serial No. : 20062240 Site Number : 34-299
Previous Log No.: 2008 110 Location : 1309 T-Street
Bar Code No. : 20062240 Sacramento, CA 95814
Elevation : 25.00'
Inst. Prop. Of : AIR MONITORING - CENTRAL

CALIBRATION STANDARDS	ID NUMBER
MOLBOX	20021121

CALIBRATION RESULTS

Component	FLOW
Instrument Range	0-5 SLM
Initial Zero Setting	
Initial Span Setting	
Final Zero Setting	
Final Span Setting	
Slope	1.006
Intercept	-0.045
Correlation Coefficient	0.99994 ✓
Change From Previous Calibration (%)	0.6455
Date Of Last Calibration	05/28/2008

Calibration Equation:

Calibration Expires: 06/19/2010

$$\text{Std. FLOW} = 0.994 * (\text{Net Display}) + 0.045$$

Comments:

CALIBRATED BY: NSB

CHECKED BY: RJm

CALIFORNIA AIR RESOURCES BOARD

FLOW CALIBRATION REPORT

TO: TESTING AND EVALUATIONS
STEVE RIDER

LOG NUMBER : 2009 031

FROM: ROBERT RUSSELL\BRIAN SPREADBOROUGH
Program Evaluation & Standards

CALIBRATION DATE: 03/13/2009
REPORT DATE : 03/13/2009

IDENTIFICATION

Instrument : AALBORG MFM GFM17
Position number : 1
Property No. : 20005063 Site Name : MLD Standards Lab
Serial No. : G15285 Site Number : 34-299
Previous Log No.: 2009 007 Location : 1309 T-Street
Bar Code No. : 20005063 Sacramento, CA 95814
Elevation : 25.00'
Inst. Prop. Of : AIR MONITORING - CENTRAL

CALIBRATION STANDARDS	ID NUMBER
MOLBOX	20021493

CALIBRATION RESULTS

Component	FLOW
Instrument Range	0 - 5SLM
Initial Zero Setting	
Initial Span Setting	
Final Zero Setting	
Final Span Setting	
Slope	0.997
Intercept	-0.018
Correlation Coefficient	0.99998 ✓
Change From Previous Calibration (%)	-1.291
Date Of Last Calibration	01/13/2009

Calibration Equation:

+1.3%

Calibration Expires: 03/13/2010

Std. FLOW = 1.003 * (Net Display) + 0.018

Comments:

CALIBRATED BY: NSD

CHECKED BY: RF